

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte PETER R. HAMMOND,
JAMES F. FEEMAN
and GEORGE F. FIELD

Appeal No. 95-4826
Application 08/141,752¹

ON BRIEF

Before RONALD H. SMITH, SOFOCLEOUS and METZ, Administrative Patent Judges.

RONALD H. SMITH, Administrative Patent Judge.

DECISION ON APPEAL

¹ Application for patent filed October 27, 1993.

Appeal No. 95-4826
Application 08/141,752

This is an appeal from the final rejection of claims 14 and 16. Claims 9, 11-13 and 15 stand allowed, and claims 1-8 and 10 have been cancelled.

The subject matter relates to compounds useful as water soluble laser dyes. Copies of appealed claims 14 and 16 are attached in the appendix to this decision.

The references relied on by the examiner are:

Austin et al. (Austin)	3,956,300	May 11, 1976
Friedrich et al. (Friedrich)	4,256,882	Mar. 17, 1981

Claims 14 and 16 stand rejected under 35 U.S.C. § 103 as unpatentable over Austin. Further, claims 14 and 16 stand rejected under 35 U.S.C. § 103 as unpatentable over Friedrich. We have carefully considered the entire record, including appellants' position as set forth in their briefs, and the examiner's position, as set in his answers, and we have decided that we will affirm the examiner's rejections. Since we are in substantial agreement with the examiner's position as set forth in his answers, we adopt his position as our own.

As noted by the examiner, Austin discloses xanthene dyestuffs (column 1, lines 4-65) of formula (1), in which R^2 and R^3 may be H, R^1 and R^4 may be sulphoethyl, and phenyl ring A may be substituted by a sulfonic acid group. The dyestuffs thus disclosed by Austin differ from the dyes set forth in claim 14 in

that appealed claim 14 (and claim 16) require that the xanthene ring be methyl substituted. We agree with the examiner that the

use of such homologues would have been prima facie obvious to one of ordinary skill in the art since compounds with such similar structures would have been expected to have similar properties and utilities. Ex parte Fauque, 121 USPQ 425 (Bd. App. 1954).

Friedrich discloses in Example 1 a water soluble dyestuff of formula VIII, which differs from the dyestuffs in appealed claims 14 and 16 in not possessing a second sulfonic acid substituent on the benzene ring and not possessing the methyl substituents on the xanthene ring. However, Friedrich teaches that methyl substituents on the xanthene ring "are understood" to be within the disclosed invention. Further, the methyl substituted dyestuffs are such structurally similar homologues that they would have been prima facie obvious to one of ordinary skill in the art. We agree with the examiner that it would have been prima facie obvious to add an additional sulfonic acid substituent to the benzene ring of Friedrich's dyestuff VIII. Sulfonic acid substituents are routinely used to improve the solubility of water soluble dyes, and we note, for example, that Austin discloses that his xanthene dyes preferably contain "more

Appeal No. 95-4826
Application 08/141,752

than one further SO₃H group" and may "advantageously contain up to six sulphonic acid groups."

Appellants erroneously allege that Friedrich "fails to teach an alky group connected to the nitrogen atoms." As noted by the examiner, Friedrich's alkylene group in formula VIII (CH₂CH₂) is identical to appellants' (CH₂)_m, notwithstanding the fact that appellants refer to the group as alkyl rather than alkylene.

Appellants argue that the precedents relied on by the examiner for asserting a prima facie case of obviousness are not on point. We disagree with appellants, since we find the fact situation in Fauque, supra, to be analogous to the situation here. In Fauque, the claimed compound differed from the reference in that it contained two methyl groups (one on each ring, adjacent to the O atom) whereas the reference was unsubstituted at the position adjacent to the O atom. The Board agreed with the examiner that the claimed compound was a homologue of the compound disclosed in the reference and presumed to be equivalent and stated further:

An inspection of the formula of appellant's compound in question discloses an analogous difference over the compound of the prior art. The fact that two methyl groups are involved is not seen to change the situation since this merely represents the

next higher homologue above the single methyl group substituted compound.

Appellants urge further that even in view of Austin's disclosure of a disulfonate substitution on the pendent phenyl, the Austin disulfonate would not be homologous to the claimed structures because no guidance or motivation is given to attach the methyls in a position ortho the the amino groups. Appellants urge that a skilled chemist "might place methyls in a trans format." Suffice it to say, the methyl homologues would be prima facie obvious regardless of whether the methyl groups were placed in the ortho or the trans positions. In either case they would be expected to have similar properties and utilities as the dyes disclosed by Austin. Moreover, as noted by the examiner, two of the three possible positions would be ortho.

Appellants urge that "orthoalkylation is neither taught nor suggested by the applied prior art." As noted above, Friedrich teaches methyl substituents on the xanthene ring, and two of the three possible positions for substitution are ortho. Plainly, Friedrich suggests orthoalkylation.

Appellants also urge that sulfonation of the pendent phenyl at the 4 position is neither taught nor suggested. We disagree again. Preliminarily, it is noted that claim 14 permits

sulfonation at any position (3, 4, 5 or 6) and is not limited to the 4 position. The examiner has pointed out in his answer that the sulfonic acid groups impart water solubility to the dyes, and that further sulfonic acid substitution would be expected to

gradually vary the solubility of these dyes. Both Austin and Friedrich teach the sulfonation of the pendent phenyl at the 2 position as is set forth in the appealed claims. Austin clearly teaches in column 1, lines 48-56 the desirability of additional sulfonate groups on the pendent phenyl group thereby generically disclosing sulfonation at any of the 3, 4, 5 or 6 positions. Austin's teaching renders it prima facie obvious to sulfonate any of the noted positions of the pendent phenyl group.

Appellants contend that the present invention "exhibits significant unexpected benefits which are more than sufficient to overcome such a prima facie case." It is urged that the dyes according to the invention have marked water solubility while retaining laser efficiency. We agree with the examiner, however, that although appellants allege superior and unexpected results, no evidence has been presented of any comparison of appellants dyes with those of the closest prior art, e.g., the dyes disclosed by Austin and by Friedrich. Accordingly, it is our

Appeal No. 95-4826
Application 08/141,752

view that appellants have not met their burden to rebut the prima facie case of obviousness.

The decision of the examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

RONALD H. SMITH
Administrative Patent Judge

MICHAEL SOFOCLEOUS
Administrative Patent Judge

ANDREW H. METZ

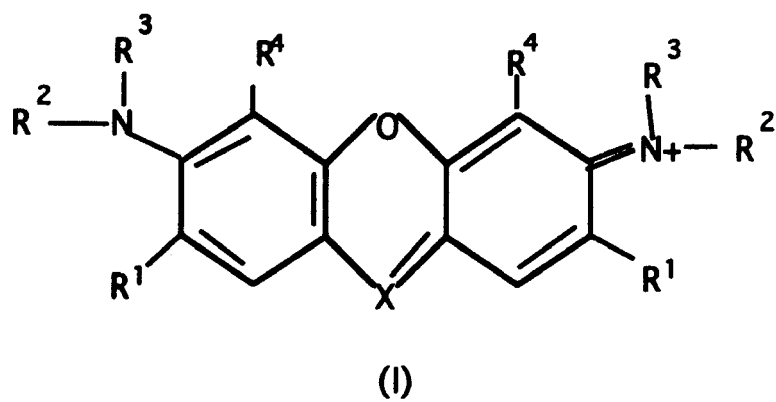
)
)
)
)
) BOARD OF PATENT
) APPEALS AND
) INTERFERENCES
)
)

Appeal No. 95-4826
Application 08/141,752

Administrative Patent Judge)

Richard E. Constant, Assistant General
Counsel For Intellectual Property
Mail Code GC-42 (FORSTL) MS-6F-067
1000 Independence Avenue, SW, DOE
Washington, DC 20585

Appeal No. 95-4826
Application 08/141,752

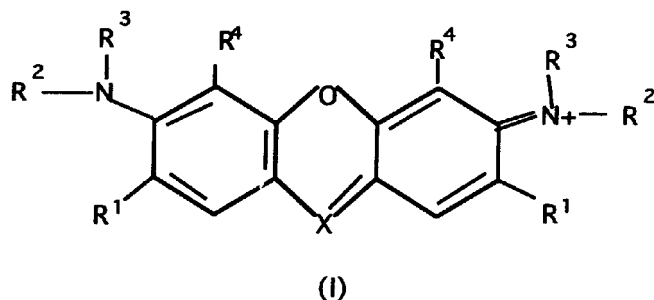


APPENDIX

14. A composition of matter having the formula I:

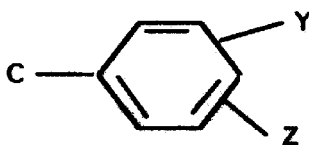
Appeal No. 95-4826
 Application 08/141,752

wherein: R^1 is methyl and R^4 is hydrogen; or R^1 is hydrogen and R^4 methyl; or R^1-R^2 or R^2-R^4 form part of aliphatic heterocyclic rings; R^2 is hydrogen or joined with R^1 or R^4 as described above; R^3 is $-(CH_2)_m-SO_3-$, where m is 1 to 6; X is N, CH or



Y is $-SO_3-$ at position 2 of the ring; and Z is $-SO_3-$ at position 3, 4, 5 or 6 of the ring.

16. A composition of matter having the formula I:



Appeal No. 95-4826
Application 08/141,752

wherein R^1 is alkyl, R^2 is hydrogen and $R^4=H$; or R^4 is alkyl and R^1 and R^2 are hydrogen; R^3 is $-(CH_2)_m-SO_3-$, where m is 1 to 6; X is N, CH or

wherein Y is $-SO_3-$ at position 2 of the ring; and Z is $-SO_3-$ at position 4 of the ring.

